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ABSTRACT

Based on the assumption that behavioral aspects of faculty productivity are often not considered in development efforts, it is proposed that data collection to support the enhancement of faculty productivity should account for the behavioral dimension. Research concerning faculty productivity is reviewed, and it is concluded that the entire work environment must be considered in order to affect productivity. To enhance productivity, consideration should be given to the needs and skills of the individual, the goals and structure of the institution, the demands upon the faculty member from his environment, and the specific nature of the task(s) to be accomplished. Faculty productivity enhancement efforts are best characterized as contingency programs, dependent upon the unique interactions of task, organization, individual, and environment. Dimensions of faculty productivity are examined using a modified version of the Nemiroff-Ford Conceptual Contingency Model. A comprehensive information structure that could be used as the basis for data collection efforts related to faculty productivity is outlined. (SW)

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ATTENTION: FORUM PUBLICATIONS EDITOR

FACULTY PRODUCTIVITY:
BEHAVIORAL CONSIDERATIONS

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Faculty Productivity: Behavioral Considerations

The paper is based on the assumptions that 1) improved information can help us address higher education's most pressing issues, 2) that one of the most pressing issues pertains to the need to substantiate and, where possible, enhance faculty productivity; and 3) that organizational psychologists have defined numerous dimensions of the productivity and job satisfaction of professionals in the private sector which the authors believe to be equally important in higher education. The authors review the relevant literature and then describe the organizing framework for information of a more behavioral nature related to faculty productivity.

Faculty Productivity: Behavioral Considerations

Introduction

A growing, increasingly visible trend in higher education is the collection of information to provide more objective support for decisions by institutional management. Substantial efforts are devoted to fashioning the data collection process for greater efficiency, the data for improved accuracy, and the resulting information to be more closely aligned with institutional needs. The assumption is that these information packages, if timely, relevant and accurate, can help us address more effectively the issues that face us today. The purpose of this article is not to question that assumption, but to explicate its implications for efforts to enhance faculty productivity. If one accepts the need for improved faculty productivity and also assumes that information, properly supplied and applied, can make these efforts more viable, the question is what kinds of information are appropriate, what kinds are feasible to collect, and what rationale supports their selection? In this article the issue of the relationship between data collection, productivity, and behavior is examined. The assumption is simply that many efforts to improve productivity avoids or omits behavioral aspects of productivity issues. Moreover, it is my thesis that data collection to support the enhancement of faculty productivity must account for the behavioral dimensions of faculty productivity.

Historical Approaches

Briefly, though clearly there are recent exceptions, most data collection efforts related to faculty productivity have emanated from the needs and practices of traditional personnel and accounting functions where the concern encompasses payroll and benefit programs. Thus, the collected information has been largely demographic in nature. It generally is restricted to descriptors of age, sex, tenure status, family particulars, department, and research project assignments. In addition, many colleges and universities have chosen or have been encouraged to assemble information regarding faculty activities (defined as percentages of time or hours devoted to various kinds of activities) in order to respond to the requirements of legislative or governing bodies. These activity data or their close relatives, assignment data, are frequently used as well as a basis for distributing portions of faculty salaries to various "cost centers" as an integral component of cost accounting. Finally, some institutions have also engaged in collecting information about the formal academic backgrounds of individual faculty members to assist in the making of appropriate teaching assignments.

Collectively, these pieces of information seem to have been gathered largely to satisfy administrative needs. Their legitimacy for support of current, let alone "new" approaches to faculty productivity efforts appears to be limited at best. Although necessary, for the most part they seem insufficient. For example, such data provide a record of assignments and an inventory of academic credentials. Yet they are found wanting relative to helping to reflect individual characteristics and their relationship to job satisfaction and performance.

What kinds of data are therefore suggested by current and new faculty development programs? At the very least they must be supportive of and related to the following needs:

- The need for flexibility in deploying and using institutional resources to meet the institutional demands of a rapidly changing higher education clientele and the accelerating, voracious research and service demands of struggling local, national, and world communities.
- The need for sustenance and stimulation of the individual not only on humanitarian grounds but also for reasons related directly to institutional effectiveness and efficiency (productivity).
- The need for solutions to tenured-in problems which glare at and disrupt an increasing number of institutions.
- The need for understanding and using factors and relationships associated with organizational and individual productivity.

A New Approach

As pointed out above, current and new approaches to enhancing faculty productivity are constrained by the rather limited types of information about faculty heretofore collected. Data collection more pertinent to efforts to enhance faculty productivity would benefit greatly from the recent findings of scholars from a variety of disciplines who are continuing to examine organizational behavior, individual productivity, and personal job satisfaction. Though their work is conducted primarily in non-academic settings, their findings have implications for the collegiate sector. A considerable portion of this research has benefitted from the early insights of scholars such as Lewin, Herzberg, McGregor, McClelland, Maslow, Argris, and Schein.

Recent research, built on the shoulders of these early pioneers, has expanded and modified their initial theories. More specifically, it suggests that any effort to increase faculty productivity must acknowledge the interactive nature existing among the task, the organization, and the individual?. We would add a fourth dimension, particularly in the collegiate setting, which would require the acknowledgement of a fourth factor, the environment. Thus, productivity enhancement efforts should account for and incorporate information about the academic task, the academic organization, the academic environment, and the environment in which they all interact.

Nemiroff and Ford [17] recently described a Conceptual Contingency Model which argues that previous research and program development efforts to increase worker productivity have not recognized the interdependency of the task, the organization, or the individual. Partial support for this argument comes from the efforts of Katzell and others [12] who have demonstrated that an increase in worker satisfaction has negligible (or even negative) correlation with productivity. Katzell states that increased productivity and worker satisfaction can both be enhanced only if the following conditions obtain (Katzell [12, p. 39]):

1. Financial compensation of workers must be linked to their performance and to productivity gains.
2. Workers and work must be matched to establish a work situation which workers will perceive is capable of meeting their needs and expectations, and where they will have the capabilities and resources to be successful.

3. For workers who desire it, their work should provide opportunity for making full use of their abilities, making meaningful contributions, having challenging and diversified duties, and being responsible for others.
4. Workers at all levels must have inputs to plans and decisions affecting their jobs and working lives.
5. Appropriate resources, including work methods and equipment, must be provided to facilitate workers' performance and minimize obstacles to carrying out their jobs.
6. Adequate "hygiene"¹ conditions must exist, including competent and considerate supervision, fair pay and fringe benefits, job security, good working conditions, and sound employee relations.

Although research literature is presently incomplete, Katzell hypothesized that theory and practice suggest that additional elements could well be added to the above inventory:

1. Career structures which afford favorable future prospects for promotion, personal growth, and greater rewards.
2. Revised use of time for work and leisure, such as four-day weeks, sabbatical leaves, educational leaves, split schedules for couples, and early and partial retirement plans.
3. Cooperative patterns of labor-management relations, such as new roles for unions or creation of works councils.

J. Richard Hackman and his colleagues [7] maintain that five core dimensions affect the psychological states that are critical in determining whether or not an employee will be internally motivated to work effectively, namely skill variety, task identity, task significance, autonomy and feedback. Further, they argue that it is possible to compute a Motivating

Potential Score (MPS) for a particular job. Accordingly, Hackman has developed instruments which gauge the following: (1) the objective characteristics of the jobs themselves; (2) the current levels of motivation, satisfaction, and work performance; (3) the level of growth-need strength of the employees.

The foregoing discussion cannot be considered complete; literally thousands of studies have been conducted to determine factors related to worker satisfaction and motivation. We regard the preceding, however, as a fair representation of what has been learned in complex organizations regarding what Morse and Lorsch [16] label as "competence motivation."

What has been learned by these researchers and their colleagues about the collegiate setting, perhaps one of the most complex organizations ever devised? Unfortunately, not much. What little research is available seems to substantiate the findings noted in other organizational situations but for the most part organizational behaviors, personal job satisfaction, and individual productivity remain largely uncharted in the geography of academic performance. Following are capsules of the few examinations made.

Aebi [1] and Morris [15] examined job satisfaction and the dissatisfaction among faculty and reported that the former is directly related to factors inherent in the work situation. Academic work itself was identified as the source of greatest satisfaction. Aebi found that the Herzberg theory of motivation was applicable to faculty but not to administrators, and that the theory was least applicable to women, faculty over sixty years old, and faculty making under \$6,000 per year. Coltrin and Glueck [6] examined the relationship between leadership roles and the satisfaction and productivity of university research professors. Their findings tend to confirm the conclusions of Katzell. More specifically, Coltrin and Glueck found that

although the job satisfaction of research professors correlates with the "administrator's leadership style, role model, and perceived ability to reward the professors' efforts, their' research productivity does not."

The authors conclude by stating: "Within the context of the situational leadership theory, it would appear important for the leader to modify his leadership style to fit the demands of the task, the group and the environment, as well as for university-wide administration to provide the means for making the situation more favorable for the leader" (p. 116).

Behymer and Blackburn [3] examined the environmental and personal variables which best predict publication output of liberal arts faculty. It was found that personal interest in research, frequent communication with colleagues elsewhere, high academic rank, the status of employing institution, teaching graduate students, and the number of journal subscriptions are the best predictors of publication productivity. The authors further reported that tenure, sex, and pressure to publish contribute insignificantly to faculty research productivity. "In general, the most salient predictors are of an intrinsic nature. In fact, some extrinsic variables fail to predict at all (e.g. perceived pressure to publish for promotion). The internal nature of the critical variables suggest that research activity is its own reward and is not engaged in for the sake of something else" (p. 17).

Now associated with the Wright Institute, Nevitt Sanford [21] has examined the issue of faculty motivation. His conclusions seem to mirror that which we have learned about other complex organizations and which experience has suggested may be true of the academic environment:

1. First, the current academic culture seems to be supportive of faculty so long as their development concerns are primarily associated with their disciplines and research activities. When higher-order development concerns, associated with teaching and student development tend to dominate, then the faculty member is likely to feel isolated from his/her colleagues, and estranged from the values and norms of his/her academic culture.
2. Secondly, even if the formal reward system of a collegiate institution supports a concern for teaching and student development, the informal, but powerful, academic culture of the institution may support a different emphasis.
3. Third, the Wright Institute staff are clearly proponents of an "interactional" model of human motivation. The development of a faculty member cannot be fully understood except in the context of the academic culture in which the faculty member resides. Faculty will be motivated to teach only when the institution not only allows the faculty member to expand his/her teaching interests through creation of a supportive academic culture, but also assists the faculty member to engage in this growth through provision of mechanisms for personal, professional and organization development.

It is our thesis that the issue of faculty productivity is much more complex than heretofore acknowledged in the collegiate community, and that such efforts must acknowledge this complexity if they are to have lasting effect.

Much of the early work on individual behavior in organizations attempted to find causal relationships between two variables in the work setting. As an illustration, McGregor, in his Theory Y postulated that there was a need to integrate goals. His theory "emphasizes the average person's intrinsic interest in how our work, his desire to be self-directing and to seek responsibility, and his capacity to be creative in solving business problems" (Morse and Lorsch [16]).

However, Morse and Lorsch examined McGregor's Theory Y in an industrial setting and found that it could not totally explain productivity in those situations examined. They then added to McGregor's work by determining that the most productive organization is one that fits the needs of the task and the needs of the individual in any given situation. They found in their research that managerial style patterned after Theory Y did not always increase productivity, particularly when the output of the task is predictable.

Thus we have seen an increased amount of scholarly production which states that the entire work environment must be considered if one wants to affect productivity. The enhancement of productivity in the collegiate setting, we maintain, is an extraordinarily complicated undertaking. To enhance productivity one must consider the needs and skills of the individual, the goals and structure of the institution, the demands upon the faculty member from his environment, and the specific nature of the task(s) to be accomplished. Thus we believe faculty productivity enhancement efforts are best characterized as contingency programs, dependent upon the unique interactions of task, organization, individual, and environment. To fail to acknowledge the complexity of the

faculty member's role and expectations is to invite failure as one attempts to enhance productivity.

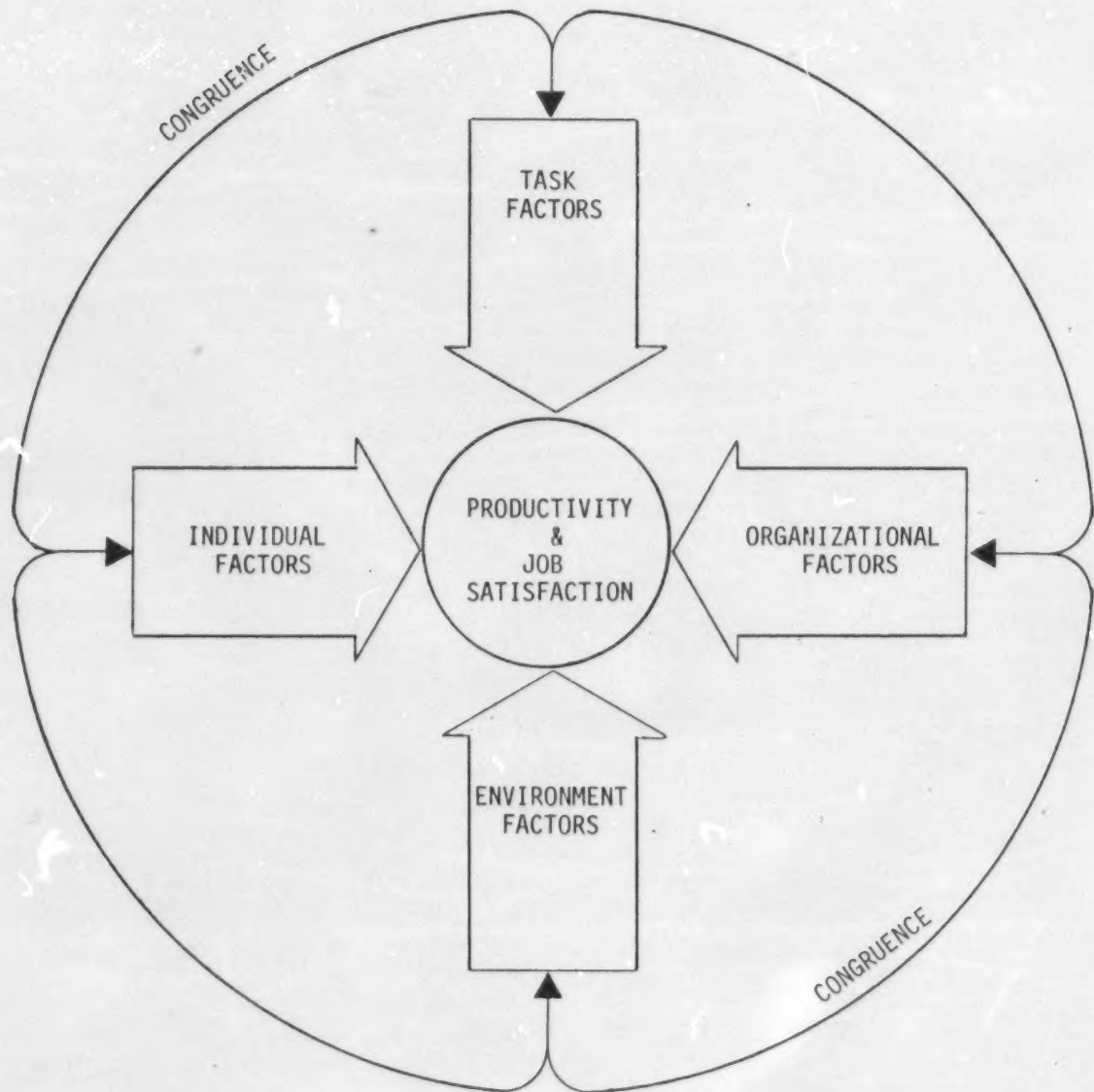
Using a modified version of the Nemiroff-Ford Conceptual Contingency Model as a vehicle for discussion, let us examine the dimensions of faculty productivity² as a precursor to examining our suggestions for information needs of new approaches to faculty development. As indicated in Figure 1, our contingency model of faculty productivity and job satisfaction includes organizational, individual, task and environmental factors.

Organization Factors. Current research argues that the best way to organize depends on the uncertainty and complexity of the mission of the organization. In the major research university the faculty member has a multiplicity of roles to fulfill, from "production" of student credit hours (assuming that they indeed reflect the occurrence of learning) to production of scholarly works to public service to institutional support. Research suggests that productivity can be enhanced in such an organization if the structure is organic (less precise definitions of responsibilities and fewer rules). Can the same be stated for the community college? It is suggested that even though the valued outcomes of such organizations tend to locate close to the teaching role, a similar strategy of productivity enhancement can be pursued. Note, we do not imply that the teaching role is simple, but emphasize that measures of productivity must deal with a more diverse set of missions in the university than in the private liberal arts college or the community college.

Mission, then, is an important facet of the organization and we submit that productivity, management and improvement efforts must acknowledge differences in institutional goals across the variety of institutional types. It would appear that some do not acknowledge or recognize this influence on their efforts. Wilson

FIGURE 1

Factor Categories Related to
Productivity and Job Satisfaction



and Gaff [26], for example, found that fully 39 percent of their respondents in the California State University system were convinced that their effectiveness as teachers "was not of high importance in practice." The authors then note that the primary mission of the institutions in the system is that of teaching. In a similar vein, Jabker [10] concluded: "The data indicated that the effect of faculty efforts to improve instruction of the formal reward structure was generally non-existent, minimally positive at best and punitive in some instances" (p. 72).

Other organizational factors in addition to mission are important pieces of the productivity and job satisfaction equations. In addition to the leadership style issue mentioned earlier, the factor of organizational structure has a significant bearing. As support for their view that "the most powerful approach to changing human organizations,"³ is related to "direct manipulation of organizational variables," Katz and Kahn [11] offer the following (p. 35):

The major error in dealing with problems of organizational change, both at the practical and theoretical level, is to disregard the systemic properties of the organization and to confuse individual change with modifications in organizational variables. It is common practice to pull foremen or officials out of the organizational roles and give them training in human relations. Then they return to their customary positions with the same role expectations from their subordinates, the same pressures from their superiors, and the same functions to perform as before their special training. Even if the training program has begun to

produce a different orientation toward other people on the part of the trainees, they are likely to find little opportunity to express their new orientation in the ongoing structured situation to which they return.

Individual Factors: A proper match between individual characteristics or predispositions and group organization structure promotes human fulfillment. Thus, the interaction effects of individual and organization are of considerable importance. Vroom [25] found that the relationship between participation and job satisfaction were contingent upon specific personality traits. Vinton [24] discovered moreover that in the classroom there is no one best classroom structure for all students; "high levels of fulfillment are contingent upon a consonant individual-structure fit" (p. 24). We assume that the same obtains for faculty as well.

Hodgkinson [9] found that there are significant differences in faculty in different stages of their life. He discusses, for instance, the characteristics of faculty between ages 22 and 29 ("getting into the adult world") and the interests of those between ages 30 and 38 ("settling down").

Individual differences were also noted by Tuckman and Oliver [22] who learned that younger faculty, those with the least experience, were most resistant to supervisor feedback. On the other hand, the younger faculty member was more receptive to student feedback than his or her more experienced colleague.

We have spoken of life stage, age, and learning/teaching style as important distinguishing characteristics of the individual which are closely tied to productivity and job performance. Martha Brown [5] posits values as being a "necessary but neglected ingredient of motivation on the job." In her work she argues that (p. 15)

- Values are the most useful ethical concept in the mix that determines motivated behavior
- Values are critically tested at the interface between employee and administrator
- Values can be measured at this critical interface in the hope of improving the relationship and thus job satisfaction

Thus values constitute an important fourth consideration on the individual dimension. Gordon Allport suggests ten additional individual categories including values: "intellectual capacities, syndromes of temperament, unconscious motives, social attitudes, ideational schematics, interests and values, expressive traits, stylistic traits, pathological trends, and factorial clusters not readily classifiable in the other nine categories" [2, p. 46].

The research findings above regarding individual factors are not meant to be exhaustive but illustrative. We could speculate about findings which would illuminate those characteristics of individual faculty which suggest resistance to changes, or we could discuss skill/interest differences between faculty. Moreover, one could justifiably argue that some faculty who are otherwise productive researchers cannot or have not become effective or productive teachers. Indeed, any attempt to demand increased teaching productivity of such persons could result in a decrease in net individual and institutional productivity. In summary, rather than belabor the point, we argue that individual factors are an undeniably important consideration in faculty productivity and job satisfaction improvements.

Task Factors. Every collegiate institution has a multiplicity of tasks to be performed. We have previously discussed the variety of role (task) expectations in the major research university and have suggested that the task expectations in the community college are considerably different even though the variety of these community college tasks may be equally high. In the teaching role, for example, there are discipline differences, methodological differences, and differences in student expectations, to name a few.

An effort to increase faculty productivity must not only recognize these differences, but correlate them with individual differences, and the variety of organizational structures and styles. It has been found, for example, that differences in reactions to complex jobs can vary by the employee's cultural background (Turner and Lawrence [23]) or whether the employee is urban or rural (Blood and Hulin [4]). Nemiroff and Ford [17, p. 77] state that "Certain characteristics of the employees themselves must be considered simultaneously with characteristics of their jobs in order to generate valid predictions about employee attitudes and behavior."

J. Richard Hackman [7] and others have advanced arguments which supplement these conclusions. Hackman and his colleagues have postulated that there are five core characteristics of jobs which enhance employee motivation:

1. Skill variety: The degree to which a job requires the worker to perform activities that challenge his skills and abilities.
2. Task identity: The degree to which the job requires completion of a "whole" and identifiable piece of work, doing a job from beginning to end with a visible outcome.

3. Task significance. The degree to which the job has a substantial and perceivable impact on the lives of other people, whether in the immediate organization or the world at large.
4. Autonomy: The degree to which the job gives the worker freedom, independence, and discretion in scheduling work and determining how to carry it out.
5. Feedback: The degree to which individual workers, in carrying out the work activities required by the job, get information about the effectiveness of their efforts.

Environment Factors. In the tertiary educational setting, the faculty member is most likely a "citizen" of many communities such as the institutional community, the discipline, or the department, and even the informal group. Too, we find many faculty members who consider themselves "citizens" of the larger community in that they have a role to play not only in the creation and transmission of knowledge for and to the external community (society) but to participate in another vital mission of the institution, that of criticism of the values, mores and practices of that society, be it local, regional, national, or international (Kenniston [13]). Thus, the faculty member can conceivably have divided loyalties, based on conflicting "citizenship" although, unlike the private sector, such divided loyalties are oftentimes encouraged and consistent with the mission of the institution.

In addition to the interrelationships between the individual faculty member and the environment, the environment can have impact upon the faculty member. As a citizen of the world at large, many faculty can become significantly involved in remediation of issues of the day, from problems of unemployment to that of production of food for the third world. On a more personal level, the environment can affect the faculty member if external

governance authorities, for example, restrict funding such that teaching loads must be increased, or if the enrollment of students stabilizes or sharply declines or if ecological/economic issues inhibit one's ability to perform.

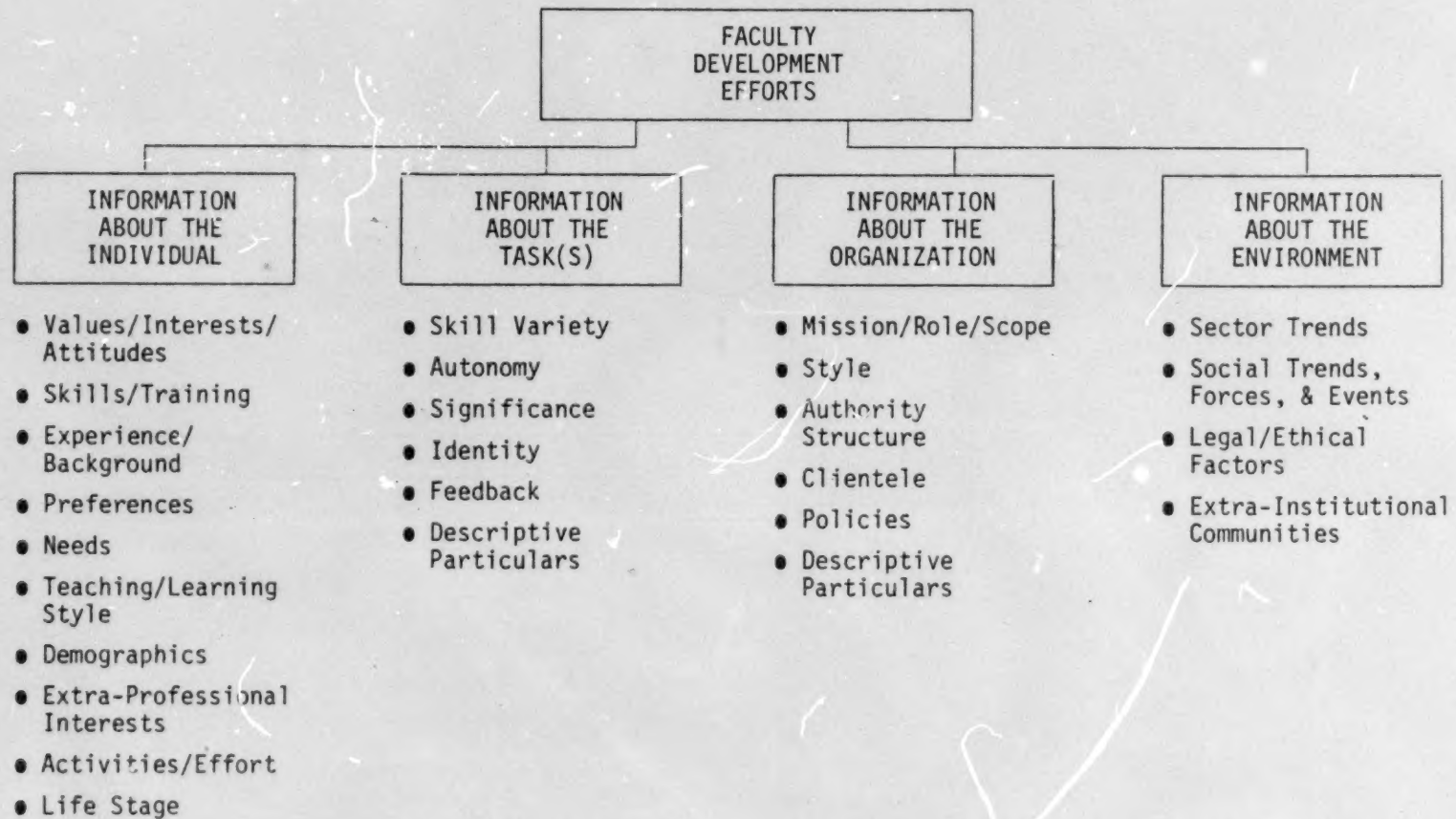
Our intent here is not to chronicle all the potential interrelationships between the faculty member and his/her environment, but instead to dramatize that such relationships are important in any consideration of faculty productivity efforts. Perhaps influences emanating from the environment are impossible to control. Yet they must be acknowledged.

Data for Faculty Productivity

If the assumption proffered at the beginning of this article is realistic, namely that timely, relevant, accurate information can improve decision making, then it seems to follow that in order for information to be relevant to the needs of faculty productivity enhancement efforts, it must be consistent with the assumptions and principles of the paradigm upon which the effort operates. In the preceding sections we have presented the outlines for a model of productivity and job satisfaction. Accordingly, data collection efforts, or the elements of "faculty information systems" should coincide rather closely with this paradigm. In the following pages we outline in very brief fashion a comprehensive information structure that could be used as the basis for data collection efforts related to faculty productivity. We emphasize could for the simple reason that the total number of data item possibilities is staggering, not to mention the question of whether or not these items can be feasibly collected or usefully integrated into efforts once obtained. Figure 2 presents the basic elements of this structure.

FIGURE 2

Primary Characteristics of a Framework
of Information Related to Faculty Data Collection Efforts



Clearly, the cost implications of the kinds of information outlined in Figure 2 are unreasonable, given the need to collect, analyze, digest, and apply the information. The framework presented in Figure 2 can be likened to a hardware store displaying a comprehensive set of information tools that could be used to assist in a faculty productivity improvement effort. Some we use daily, some are enticing but rather unnecessary, while others would be dangerous in any but the hands of a bona fide expert. Just as the peculiarities of a particular job as well as the expertise of the carpenter largely determine the tools to be selected and used, the needs of the faculty development situation and the expertise of the responsible individuals determine what information ought to be collected and used.

For each of the items listed in Figure 2 there are methods, instrumentalizations, or sources of information available. For some, such as "social trends and events," only an awareness is called for. For others, actual data collection instruments are called for and available. Activities information related to institutional goals can be obtained through the use of an instrument developed by NCHEMS (Manning and Romney [14]). Faculty goal preferences can be determined with the aid of tools developed by the Educational Testing Service (Peterson [18]) or by the National Center for Higher Education Management Systems (Romney [20]). Values can be assessed by the Rokeach Value Survey (Rokeach [19]). These are but examples of the tools already available but which ought to be selected with prudence and intelligence.

Summary

Faculty productivity improvement is a highly visible trend in higher education, promising to survive and become even more vital, especially if higher education's current ambience continues to be negative. We have argued in the foregoing pages that productivity enhancement efforts would benefit from a more comprehensive view of the relationship between faculty growth and productivity and job satisfaction, an argument supported by the findings of scholars examining work in the private sector. We have also suggested that these more comprehensive underpinnings of job satisfaction and productivity imply an equally comprehensive vision of data collection needs, but that the implied data collection efforts, which focus on organizational factors, must be conducted with prudence and intelligence.

Notes

1. Herzberg's [8] early work demonstrated that "hygiene" factors could, by their absence, create worker dissatisfaction but could not, by their presence, guarantee worker satisfaction.
2. Nemiroff-Ford considered three dimensions in their model: task, organization, and the individual. We have added a fourth dimension; the environment, because we maintain that in the collegiate setting, as opposed to the industrial setting, outputs are more difficult to define and that productivity is significantly affected by non-institutional relationships, loyalties, and events.
3. Changing them, presumably for reasons of increased productivity and job satisfaction.

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